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of the new genus Tetrastylus; two each of Morenia and Orthomys; *Myopotamus paranensis; Plexochœrus paranensis*, previously described as a Hydrochœrus, but differing from that genus in the structure of the last molar; two forms of the new genus Cardiatherium, etc., etc. Many already known species and genera—such as Toxodon, Paradoxomys, etc.—receive additional elucidation in this text. *Macrauchenia bravardi* and *M. rothii* are separated, under the generic name of Scalabrinitherium; while *Oxyodontherium zeballosi* is equivalent to the *M. minuta* of Burmeister. *Promegatherium remalsumis*, a sloth-like animal, nearly as large as *Megatherium americanum;* and *Pseudolestodon æqualis* is another huge sloth. *Comaphoras concisus* and *Proëuphractus limpidus* are among the new loricate edentates. Remains of Cetacea are abundant in marine beds which overlie the fresh-water strata.

PLEISTOCENE.—Dr. Alfredo Dugès describes in a recent number of *La Naturaleza* a Pleistocene fossil, which he names *Platygonus alemanii.* The skeleton appeared to be complete, but was in great part destroyed during the excavation. The animal was almost double the size of the modern peccary.

MINERALOGY AND PETROGRAPHY.[1]

PETROGRAPHICAL NEWS.—The very interesting paper by Brauno[2] on the palæopicrite of Amelose, near Biedenkopf in Hessen Nassau, contains a full description of this rock and its numerous alterative products. The freshest type of the palæopicrite is composed of idiomorphic olivine, augite, both idiomorphic and allotriomorphic, irregular grains of plagioclose, picotite and magnetite. The augite often shows the unusual alteration into biotite. The principal alteration products of the rock are serpentine, siliciophite, chrysolite, metaxite, picrolite, webskyite,[3] calcite and quartz. The three substances chrysolite, metaxite and picrolite are studied in great detail, and their optical and physical properties are described at length. The author regards them each as a variety of serpentine, the first consisting of slender elastic fibres, the second of coarse stiff needles, and the third being characterized by a radiating structure. The serpentines, amphibolites and eclogites from the neighborhood of Marienbad, in Bohemia, were formerly regarded as sedimentary beds which had been metamorphosed by the action of granite, which occurs near them in a boss. Patton has recently examined these rocks very carefully. He considers[4] them as probably the result of the action of dynamic agencies upon eruptive rocks. The serpentines are shown to be derived from a peridotite, composed sometimes of bronzite, hornblende and olivine, and at other times essentially of olivine and tremolite. Different specimens of amphibolites contain zoisite, epidote, augite and talc. The most interesting rocks discussed in the paper are the eclogites. A variety which the author calls kelyphite-eclogite is made up of garnets and hornblende in a groundmass consisting of amphibole and omphacite, so intergrown as to imitate the granophyre structure of certain acid rocks. The garnets are frequently surrounded by a rim of hornblende and plagioclose, which, however, the author is disinclined to regard as a reaction rim, but is rather disposed to look upon as a growth around the garnet as a center. Zoisite, which is also found in these eclogites, is often seen in the thin section to be surrounded by a rim of cloudy substance, which under high powers is resolved into plagioclose, muscovite and a third mineral with the specific gravity and optical properties of topaz, but in which no fluorine could be discovered. Patton supposes it to be an unknown mineral with the composition $Al_2 Si O_5$.—The saussurite gabbros of the Fichtelgebirge, found in lenticular masses scattered through serpentine layers, which are interstratified with clay slates and phyllites, are regarded by Michael[1] as the result of the alteration of a sedimentary feldspathic gabbro, although it would seem, from his own descriptions, that he would have been equally well justified in concluding that the saussurite gabbro lenses are merely the less altered remains of an intercalated gabbro, whose most altered phases are now represented by the serpentine. The word "saussurite" he would use as a general term to designate a cloudy alteration of plagioclose into two or more distinct minerals. He finds that while in some cases this alteration is into zoisite and serpentine, or some indeterminable mineral, in other cases the new minerals produced are serpentine and a calcium garnet.

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[1] Edited by Dr. W. S. Bayley, Colby University, Waterville, Maine.
[2] Neues Jahrb. f. Min., etc., B. B. v., p. 276.
[3] American Naturalist, Nov., 1887, p. 1021.
[4] Min. u. Petrog. Mitth., 1887, ix., p. 89.

Mr. Lawson,[2] of the Geological Survey of Canada, gives an account of the diabase dykes so prevalent in the Archæan region around Rainy Lake. These dykes have a width of from sixty to one hundred and fifty feet. Toward their centers they are composed of plagioclose, augite and quartz, with a greater or less proportion of colorless garnets. The augite appears as an aggregate of little crystals which fill the spaces between the other constituents, and not as one continuous crystal, as is the usual case among diabases. The quartz and garnets are found only toward the centers of the dykes, and are absent at their edges. Idiomorphic enstatite, on the contrary, is a frequent constituent of material taken from the sides of the dykes, and is absent from their centers. The features of these diabases are well worthy of the further study Mr. Lawson proposes to put upon them.—The Rev. E. Hill[1] mentions hornblende schists from the island of Sark, in which he thinks he has found indications of a former bedding and evidences of sedimentation.—Ternier[2] describes very briefly the eruptive rocks of the Mt. Mézeuc region in France, as presenting almost as great a diversity as those of Auvergne. They consist of augite and amphibole andesites, trachytes, phonolitic-trachytes and basalts in the order of their sequence. The basalts are the only ones which are at all widespread in their occurrence.

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[1] Neues Jahrb. f. Min., 1888, i., p. 32.

[2] Proceedings Can. Institute for 1887, and American Geologist, April, 1888.

MINERALOGICAL NEWS.—New analyses of several rare minerals are communicated from the laboratory of the University of Virginia. Mr. R. C. Price[3] found a lump of *tscheffkinite*, from Nelson county, Va., to possess the composition $2\,R\,O.\,R_2\,O_3.\,5(Si\,Ti)_2\,O_2$, in which $R = Ca, Be, Fe, Mg$, and $R_2 = Ce, Di, La$ and $Fe.'''$ Mr. Walker[4] obtained from *genthite*[5] :—

$Si\,O_2$	$Ni\,O_2$	$Mg\,O$	$H_2\,O$	$Fe_2\,O_3$
55.38	17.84	15.62	10.77	.56

corresponding to $\frac{1}{3}\,H_2\,O + \frac{2}{3}\,[(Mg\ Ni)\,O].\ Si\,O_2 + \frac{1}{3}\,H_2\,O$, a meerschaum (sepiolite) with its magnesium partly replaced by nickel. The mineral occurs in thin layers in a sandstone at Webster, Jackson county, N. C. It is amorphous, of a light apple-green color, translucent and greasy. It has a hardness of 2.5 and a specific gravity of 2.53.—Very similar to the last mentioned mineral is a nickeliferous *talc*, from the same locality, in which Mr. Bachman[6] found :—

$Si\,O_2$	$Ni\,O_2$	$Mg\,O$	$Fe_2\,O_3$	$Al_2\,O_3$	$H_2\,O$
53.91	15.91	19.39	1.46	2.65	6.30

—Perimorphs of *pyromorphite* after cerussite and galena are mentioned by Gonnard[7] as occurring in the lead mines of the Puy-de-Dôme, France. In some cases the pyromorphite exists merely as a thin shell enclosing a hollow space, from which the mineral formerly occupying it has been removed by solutions—The same author describes a shell, composed of little rhombohedra of siderite arranged with their axes parallel, enclosing within itself a solution of ferrous carbonate. He also calls attention to a perimorph of pyrite after calcite.—Hall and Tauss[8] have found the

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[1] Quart. Jour. Geol. Soc., Aug., 1887, p. 322.
[2] Comptes Rendus, cv., 1887, p. 1141.
[3] Amer. Chem. Jour., Jan., 1888, x., p. 38.
[4] Amer. Chem. Jour., Jan., 1888, x., p. 44.
[5] Chem. News, xxvi., p. 654.
[6] Amer. Chem. Jour., Jan., 1888, x., p. 45.
[7] Comptes Rendus, cv., 1887, p. 1267.
[8] Min. u. Petrog. Mitth., ix., 1887, p. 227.

baryto-celestite, accompanying the wagnerite at Werfen in Salzburg, to consist of 84.8 per cent. of barium sulphate and 15.05 per cent. of strontium sulphate. Like Professor Chester,[1] they regard the substance as an isomorphous mixture rather than as a definite compound.

MISCELLANEOUS.—*Wollastonite* is most frequently found in nature as a newly formed mineral in metamorphic rocks. It has also been detected as a primary constituent in eruptive rocks. Many experimenters have succeeded in obtaining the mineral artificially by means of wet processes, but until very recently all attempts to produce it in the dry way have failed. Doelter,[2] as the result of his experiments, declared that wollastonite could be produced only by wet methods, or at low temperatures in the presence of water vapor. The bearing of such a statement upon the question of the origin of eruptive rocks, is of the greatest importance if found to hold good. Hussak,[3] however, shows that the mineral can be produced by dry methods. He has succeeded in obtaining little monoclinic crystals of wollastonite by fusing together a mixture composed of three parts of $Ca\,Si\,O_3$ and one part of a glass of the composition $3\,Na_2\,O.\,Si\,O_2 + 2\,Ca\,B_2\,O_3$. When examined under the microscope these crystals were seen to possess all the properties of the natural wollastonite.—The anhydrous manganese hydroxide *pyrochroite* ($Mn\,(O\,H)_2$) has been obtained by Schulten[4] in little hexagonal prisms, perfectly transparent, of a light red tint, and with a negative refractive index. His mode of operation was to warm a little manganese chloride with a large excess of a solution of pure potassium hydroxide, care being observed to prevent the access of air during the operation.—Among the large number of artificial crystals made by the late Dr. Ebelmen, Mallard[5] describes one of some interest to mineralogists. It was produced by fusing together a mixture of silica, glucina and borax. In the resulting product were large numbers of little prisms of a positively refracting substance, which corresponded in its properties with the rare mineral *phenacite* ($Be_2\,Si\,O_4$).—Krüss[6] has found that *euxenite* from Norway contains a tenth of one per cent. of the newly discovered element germanium.—Traube[7] notes that the zeolites found in the Striegau granite are colorless when occurring at great depths, but when near the surface are highly colored.

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[1] American Naturalist, 1887, p. 852.
[2] Neues Jahrb. f. Min., etc., 1886, i., p. 119.
[3] Mineralogische und Petrographische Notizen, Bonn. p. 9.
[4] Comptes Rendus, cv., 1887, p. 1265.
[5] Comptes Rendus, cv., 1887, p. 1260.
[6] Ber. d. d. Chem. Gesell., 1888, p. 131.
[7] Neues Jahrb. f. Min., etc., 1887, ii., p. 67.